DEVELOPMENT ARTICLE

Seasoned scholars' perspectives on the core competencies, programs, research, and future directions of the field of instructional design and technology

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Abstract

Professional organizations and researchers in the field of instructional design and technology (IDT) have attempted to identify the competencies that IDT professionals should possess using a variety of methods, including a job announcement analysis, surveys, and interviews. While most of the previous studies identified the IDT competences based on practitioners' perspectives or the content of job announcements or program websites, this study examined leading scholars' perspectives on the IDT competencies, curriculum, research, and the current state and the future directions of the IDT field. Qualitative data were collected from semi-structured interviews with 21 scholars from 16 US universities who had considerable teaching experience in the IDT field. The results revealed ways to improve the IDT curriculum in addition to six core competencies for IDT professionals. Further, five themes related to research in the IDT field were identified, and seven themes related to the future directions of the field were identified. The results of the study provide faculty, researchers, and practitioners in the IDT field with unique insights on how to improve IDT programs to better prepare students for the future in this rapidly changing world.

Keywords Instructional design and technology · Instructional technology · Educational technology · Learning technologies · Learning design technology · Instructional design

Introduction

There have been discussions on what terms should be used to define this field (Carr-Chellman et al., 2008). In this study, the term Instructional Design and Technology (IDT) encompasses other terms such as instructional technology, educational technology, instructional systems technology, learning technologies, learning design technology, etc. IDT is a multidisciplinary field, and the students and graduates of the IDT programs work in a variety of settings, including K-12, business, government, and higher education. The

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common positions in the IDT field include Instructional Designer, Instructional Technologist, Online Learning Specialist, Technology Coordinator, Technology Integration Specialist, Corporate Trainer, Project Manager, Evaluator, Learning Designer, etc. (Martin et al., 2022). While there is a variety of job titles, IDT professionals is used as an umbrella term in this study.

Students often expect to learn to use emerging technologies or specific software in IDT programs. In fact, many job announcements include a list of technology or software. However, technology is rapidly changing, and the hot topics in the IDT field constantly change over time. In addition, artificial intelligence is replacing many jobs, and at the same time, new jobs are being created (Homes et al., 2019). How can IDT programs better prepare students for the future in this rapidly changing world? How can IDT programs improve their curriculum? What are the core competencies that IDT professionals should possess? What are the current trends and issues in the IDT field? In order to answer these questions, this study examined seasoned scholars' perspectives on the IDT competencies, programs, research, and future directions of the IDT field.

Literature review

In 2008, the AECT Definition & Technology Committee defined the field of IDT as "the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources" (AECT Definition & Technology Committee, 2008, p. 1). As the committee noted, the conceptions of the field have been evolving, and they continue to evolve. In today's world, what competencies should IDT professionals possess? Richey et al. (2001) defined competency as "a knowledge, skill or [ability] that enables one to effectively perform the activities of a given occupation or function to the standards expected in employment" (p. 26). Similarly, Ritzhaupt and Martin (2014) defined competencies as "generally measurable or observable knowledge, skills, abilities, attitudes and behaviors critical to successful job performance" (p. 15). Researchers have used the KSA (knowledge, skills, and abilities) framework to examine competencies in the IDT field (Kang & Ritzhaupt, 2015; Ritzhaupt et al., 2018; Wang et al., 2021; Yalçın, 2021).

Several professional organizations in the IDT field have provided standards and competencies. For example, the Association for Educational Communication and Technology (AECT) has developed standards for educational technologists in five areas (https://www.aect.org/docs/AECTstandards2012.pdf): (1) content knowledge, (2) content pedagogy, (3) learning environments, (4) professional knowledge and skills, and (5) research. The International Board of Standards for Training, Performance, and Instruction (IBSTPI) has developed 22 competencies for instructional designers in five domains: (1) professional foundations, (2) planning and analysis, (3) design and development, (4) evaluation and implementation, and (5) management. The International Society for Performance Improvement (ISPI) has proposed 10 Human Performance Practitioner Standards for instructional designers who assume the role of performance consultants. The International Society for Technology in Education (ISTE) has developed a set of standards for students, educators, education leaders, and coaches. ISTE has also developed computational thinking competencies. As Martin and Ritzhaupt (2021) noted, each organization has a different focus and provides standards and competencies for their relevant professionals.

Researchers have also attempted to identify the competencies that IDT professionals should possess using a variety of methods. Several researchers investigated the competencies for IDT professionals via a job announcement analysis (Kang & Ritzhaupt, 2015; Klein & Kelly, 2018; Moallem, 1995; Ritzhaupt et al., 2010; Sugar et al., 2012; Sümüer et al., 2006; Wang et al., 2021). For example, Kang and Ritzhaupt (2015) analyzed 400 job announcements to identify the competencies of an educational technologist. The results suggested that educational technologists must be competent in multiple areas, but especially in instructional design, project management, technical skills, and soft skills. More recently, Wang et al. (2021) examined core professional competencies for instructional designers by analyzing 1,030 job announcements. Their results highlighted critical competencies for professional instructional designers in several domains, including soft skills, the ability to work with diverse stakeholders, and technical competencies.

In addition to a job announcement analysis, researchers have often used surveys and interviews to identify the competencies of IDT professionals (Klein & Fox, 2004; Klein & Jun, 2014; Klein & Kelly, 2018; Klein et al., 2020; Ritzhaupt & Kumar, 2015; Ritzhaupt & Martin, 2014; Ritzhaupt et al., 2010, 2018). These research efforts identified competencies in various areas, including instructional design (Klein & Jun, 2014; Klein & Kelly, 2018; Ritzhaupt & Kumar, 2015), multimedia development (Ritzhaupt & Martin, 2014; Ritzhaupt et al., 2010; Sugar et al., 2012), project management (e.g., Klein et al., 2020) and performance improvement (Giberson, 2010; Klein & Fox, 2004). It is worth noting that most of the previous studies surveyed or interviewed practitioners such as instructional designers and instructional design project managers. There are a few studies addressing the perspectives of faculty (Chen et al., 2016; Klein & Fox, 2004).

Recently, Martin et al. (2022) analyzed the curriculum of the top 12 master's programs in educational technology to examine the competencies and career outcomes in educational technology. The top 12 programs were selected based on the U.S. News rankings. The content analysis of the 12 program websites resulted in foundational and specialized competencies. The foundational competencies included (1) foundations of instructional and performance technologies, (2) design and development of instruction, (3) learning theories and principles, and (4) evaluation. The specialized competencies identified were categorized into four areas, including (1) instructional materials development, (2) teaching with technology, (3) performance and management, and (4) other competencies based on context and specialization.

Purpose of the study

IDT programs face several challenges in keeping up with all the changes in technologies and jobs and preparing students to be competitive in the changing job market. Although the standards and competencies identified by IDT organizations and researchers are very useful, they often focus on a specific area such as instructional design, multimedia development, and performance improvement. However, it is worth noting that the students and graduates of IDT programs work in various settings, including K-12, higher education, government, and business. Since different jobs in the IDT field require different sets of competencies, it is quite challenging to meet the diverse needs of IDT students pursuing different careers. In addition to the multidisciplinary nature of the field, continuous changes of emerging technologies make it even more challenging to prepare students for the future with a curriculum that is up to date and relevant to diverse students. Further, it's almost impossible to address all the IDT

competencies in the limited hours of IDT programs. IDT programs need to identify core competencies that are important to all IDT professionals.

Most of the previous studies identified the IDT competencies based on practitioners' perspectives or the content of job announcements or program websites. The competencies identified based on practitioners' perspectives provide useful insights into how to prepare our students for specific careers. However, there is a lack of research addressing the perspective of scholars. In order to help IDT programs better prepare students for the future, it is critical to understand both practitioner and scholar perspectives. Focusing on seasoned scholars' perspectives, this study aimed to identify core competencies needed by all IDT professionals in various settings, rather than identifying a comprehensive set of competencies for a specific career. In addition, this study aimed to explore ways to improve the IDT curriculum and programs by interviewing seasoned scholars with considerable teaching and research experiences in the IDT field. Further, this study explored seasoned scholars' perspectives on research in the IDT field as well as the current state and the future directions of the field.

The following questions guided the study: (1) What are the core competencies needed by IDT professionals in today's rapidly changing world? (2) How can IDT programs improve their curriculum to better prepare students for the future? (3) What are seasoned scholars' perspectives on the research conducted in the IDT field? (4) What are seasoned scholars' perspectives on the current state and future directions of the IDT field?

Methods

A qualitative study was conducted to examine seasoned scholars' perspectives on the IDT competencies, programs, research, current trends, and future directions of the IDT field.

Participants

Seasoned scholars in the IDT field were invited to participate in the study via email. In terms of the selection criteria, the participants were expected to have a minimum of 10 years of teaching and research experience as a professor in the IDT field. Although a list of leading scholars was initially developed, the snowball sampling technique was used to identify additional scholars. A total of 21 scholars from 16 U.S. universities participated in the study.

All participants had considerable teaching experience in the IDT field (13–47 years). More than 80% of the participants had 20 or more years of teaching experience. Most participants (81%) were full professors, and four participants (19%) were retired professors. About 57% of the participants were male, and 62% were Caucasian. Table 1 summarizes the participants' demographic information.

Data collection and analysis

Interviews

Qualitative data were collected from semi-structured interviews. The interviews were conducted through Zoom, a synchronous videoconferencing tool. The semi-structured interviews included six main questions and additional probing questions, which focused on core

Table 1 Participants' demographic information

Demographic information	N	%
Gender		
Female	9	42.9
Male	12	57.1
Age		
40–49	2	9.5
50–59	8	38.1
60–69	6	28.6
70 and older	5	23.8
Ethnicity		
African American	1	4.8
Asian	5	23.8
Caucasian	13	61.9
Other	1	4.8
No response	1	4.8
Title		
Professor	17	81.0
Professor Emeritus	4	19.0
Teaching experience		
10–19	4	19.0
20–29	9	42.9
30–39	5	23.8
40–49	3	14.3

competencies, curriculum improvement, research, and future of the IDT field. Each interview lasted approximately 20–40 min. The interviews were recorded and transcribed by the researcher using tools within Zoom. The participants received a $25 Amazon gift card after interviews. The study was partially supported by the researcher's institution.

Data analysis

Thematic analysis methods were used to inductively code transcribed interviews for emerging themes (Miles et al., 2014). More specifically, the following five-step procedures were used (Thomas, 2006): (1) preparation of raw data files (data cleaning and printing), (2) close reading of text, (3) creation of categories or themes, (4) overlapping coding and uncoded text, and (5) continuing revision and refinement of category system. In order to further analyze the data related to core competencies, the KSA (knowledge, skills, and ability) framework was used. The following section describes the framework in detail.

Analytical framework

Researchers have examined and analyzed IDT competencies using a conceptual framework developed and validated by Ritzhaupt and his colleagues (Ritzhaupt & Kumar, 2015; Ritzhaupt & Martin, 2014; Ritzhaupt et al., 2010). The conceptual framework incorporates a widely accepted definition of educational technology (Januszewski & Molenda, 2008)

and connects the definition to knowledge, skill, and ability (KSA) statements. The *knowledge* statement refers to "an organized body of information" (Ritzhaupt et al., 2010, p. 427). The *skill* statement is defined as the "adept manual, verbal, or mental manipulation of things" (Ritzhaupt et al., 2010, p. 427). Finally, the *ability* statement refers to "the capacity to perform an observable activity" (Ritzhaupt et al., 2010, p. 427). In this study, the KSA framework was employed to analyze the data related to core competencies (Research Question 1). More specifically, the KSA framework was used to categorize the core competency themes into knowledge, skills, and abilities domains. For example, the research competency was further analyzed and categorized into knowledge (e.g., research methodologies) and abilities (e.g., conducting research studies) domains.

Results (RQ1): core competencies for the IDT professionals

Six themes related to core competencies were identified: (1) theoretical background, (2) instructional methods and strategies, (3) instructional design, (4) communication and other soft skills, (5) research, and (6) technology. Further analysis with the KSA framework revealed the knowledge, skills, and/or abilities related to each theme. Table 2 below summarizes the identified core competencies for the IDT professionals.

In the knowledge domain, the participants believed that IDT professionals must have knowledge of learning theories, instructional-design theories, instructional methods and strategies, instructional design process, models, and principles, research methodologies, and features and affordances of a variety of technologies. In the skills domain, project management skills, communication and other soft skills, and technology skills were identified as core competencies. In the ability domain, the participants emphasized that IDT professionals should be able to work effectively with others, use research findings to make informed decisions, and conduct research studies.

Knowledge domain

Theoretical background

Many participants, including Participants 1, 4, 7, 8, 10, 11, 12, 16, 17, 18, and 19, believed that IDT students must have a solid theoretical background. More specifically, they believed that students need to understand "how people process information," "how people learn," "all learning theories," "the cognitive aspects of using technology," "instructional-design theories," and "systems theory."

Instructional methods and strategies

The participants believed that understanding the "instructional side" of the field is critical. For example, Participant 1 commented that the most important thing is to "understand what methods of instruction are going to work well in what different situations." As the following quote shows, Participant 10 also emphasized the importance of understanding instructional methods.

Table 2 Core competencies for the IDT professionals

Core competencies	Knowledge of...	Skills	Ability to...
Theoretical background	• Learning theories • Instructional-design theories		
Instructional methods and strategies	• Instructional methods and strategies		
Instructional design	• Instructional design process • Instructional design models • Instructional design principles • Project constraints	• Project management skills	
Communication and other soft skills		• Communication skills • Other soft skills	• Work effectively with others
Research	• Research methodologies		• Use research findings to make informed decisions • Conduct research studies
Technology	• Features and affordances of a variety of technologies • Technology as a tool	• Technology skills (Different jobs require different technology skills.)	

I think you need to know something about the instructional side of the field. So that means you need to know which instructional methods are more effective, especially for different technologies... It's not the technology that helps people learn. It's the instructional method that causes learning. So I think people need to have a good understanding of what the research says about what instructional methods are effective.

Instructional design process, models, and principles

Most participants believed that students should know about the instructional design (ID) process, models, and principles. However, one participant believed that we should remove all design models and focus on design thinking and design principles. Several participants emphasized the importance of understanding the ID project constraints such as time and budget constraints.

Research methodologies

The participants believed that students need to understand various research methodologies, including quantitative research, qualitative research, and mixed methods research methods.

Features and affordances of a variety of technologies

The participants generally agreed that students need to know about the features and affordances of different technologies. Several participants suggested that IDT programs need to make sure students understand that technology is a tool.

Skills domain

Project management skills

In the context of instructional design, participants emphasized the importance of project management skills. They believed that students should be able to manage projects and instructional systems effectively and efficiently. Particularly, they emphasized the importance of managing projects within certain constraints or boundaries.

Communication and other soft skills

Many participants, including Participants 2, 4, 5, 9, 10, 13, 14, 15, and 17, emphasized that communication skills are very important in our field. They suggested that students should learn "how to communicate with clients" and other people, how to clearly communicate difficult messages (e.g., limitations of design approaches) "without offending people," "how to communicate with the field through publication and conference papers," how to "communicate with empathy," how to integrate "verbal and nonverbal communication to make convincing arguments and persuade others," and "how visual communication works" as well as oral and written communication. Other soft skills addressed by the participants

include collaboration, teamwork, design thinking, problem solving, critical thinking, critiquing, evaluation, leadership, and metacognitive skills.

Technology skills

In general, the participants agreed that students need to develop technology skills. However, they had different opinions about teaching technology skills. Some participants believed that we need to teach students current technologies, but others believed that it's not our role to prepare them for specific technologies pointing out that different jobs in the IDT field require different technology skills.

Abilities domain

Work effectively with others

The participants emphasized that students should be able to work well with people from diverse backgrounds because most, if not all, jobs in the IDT field require collaboration with different professionals (e.g., subject matter experts, clients, faculty, project managers, developers, etc.). They believed that students would be more successful if they learn how to be tactful with other people, how to interact with people from diverse backgrounds, and how to communicate without offending people.

Use research findings to make informed decisions (master's students)

The participants believed that master's students, who are "consumers of research," should learn "how to select and interpret the best research" and how to use research findings to make informed decisions.

Conduct research studies (doctoral students)

The participants believed that doctoral students should be able to conduct research studies with the knowledge of the prior research in the field and various research methodologies. They emphasized the importance of preparing doctoral students to become independent researchers.

Results (RQ 2): how can IDT programs improve their curriculum to better prepare students for the future?

How can IDT programs improve their curriculum to better prepare students for the future? What is missing? What should be added or removed? What kinds of changes should be made? Seven themes related to the improvement of IDT curriculum were identified:

More choices

The participants thought that there're not enough credits and enough time to teach everything that students need to know because "the hours of the programs have gotten smaller and smaller." Overall, the participants suggested having less requirements and providing more choices. For example, Participants 14 suggested that IDT programs should provide "a small core" that is important for everyone and lots of options because IDT students go in dozens of different directions unlike other programs that have one career path for students. Participant 21 suggested that IDT programs should have less discussions on current trends and hot topics and instead "teach more general principles and processes" that can be applied to diverse contexts to create more room in the schedule and then allow students to choose the topics that are going to be important and relevant to them.

Foundational courses

Several participants emphasized the importance of learning about the history and foundations of the field. Participant 4 felt that we're returning to the 1960s and 1970s with over-emphasis on technology because the field itself does not recognize its own history. Participant 3 suggested that IDT programs should teach students where the field has been, where the field is now, and where it's going through "a historical, people-based reading seminar."

Evaluation

Based on their observations and experiences in different institutions, the participants reported that evaluation is often missing in the IDT curriculum. They observed that some programs had eliminated evaluation courses. Participant 21 pointed out that our field is heavy on design and technology but light on theory and evaluation. As the following quote indicates, the participants emphasized the importance of evaluation and suggested including evaluation in the IDT curriculum.

> I've been looking at some curriculum lately, and I think they're not emphasizing evaluation enough to me... You can create a really good first version of an innovative educational program or an innovative curriculum, but you need to evaluate it and put it through interactive formative evaluations in order to improve it systematically over time. I've actually seen some master's programs that are eliminating evaluation courses, which I think is to our detriment. So I definitely think we need to emphasize evaluation.

Soft skills

The participants thought that IDT programs often do not teach many soft skills assuming that they come naturally. They suggested that IDT programs should help students develop soft skills, including communication, collaboration, leadership, project management, teamwork, flexibility, and problem-solving skills. They also suggested that IDT programs should prepare students to be "change agents" and "bridge builders."

Several participants indicated that IDT students should be able to clearly communicate their design ideas to their clients and persuade them if needed. Participant 14

reported that students often don't come away with great communication skills and get frustrated when working with subject matter experts who often have already one set of goals in mind. Participant 14 argued that instructional designers should be able to guide and educate their clients beyond meeting their needs and requests, as the following quote indicates.

> In our field, we've been taught to believe that we need to satisfy our clients' needs and our students' needs, but we have not taught much about our social responsibility - how we should guide our clients and how we should educate our clients, you know... We often think that designers just do whatever, you know, in response to our clients' requests. But I think we also have a responsibility, social responsibility, in making the decisions that will have positive impacts on our clients or beneficiaries, whoever they are.

Less focus on technology

Several participants commented that students often expect to learn how to use specific technologies, such as Adobe Captivate or Illustrator, in IDT programs. Participant 15 found it unfortunate that many job postings have a list of technologies. She indicated that IDT programs are not teaching enough about what our field is, what we do, and what we need to be successful in the field. Participant 16 believed that providing courses that teach the most up-to-date software is not a fruitful way because technology is constantly changing. She suggested that students should learn to select and use tools in the context of solving a design problem. Participant 10 argued that it's a huge problem that people don't care about methods and focus on technology, as the following quote shows.

> I think people get so excited about cutting edge technology... People who are technology worshippers think that technology is what we should be focusing on. And every decade, there have been these great cutting-edge technologies that everyone thought would revolutionize education, and they never do.

Overall, the participants believed that IDT programs should focus more on methods, strategies, design principles, theories, solving complex problems rather than on technology.

DEI, OER, and ethics

Pointing out the issues of digital divide and access, the participants suggested that IDT programs should add content regarding DEI (diversity, equity, and inclusion), OER (open educational resources), and ethics to their curriculum. Participant 16 indicated that DEI and OER are missing in the IDT curriculum because most IDT faculty did not take DEI courses when they were students. Participant 11 thought that "social and cultural aspects in instructional design" are missing even though we always do the learner analysis, task analysis, and context analysis. In a similar vein, Participants 18 argued that we should put a "greater emphasis on inclusive design for learners of varying abilities and learning across cultures and across nations." In terms of OER, Participant 5 suggested that IDT students should learn how to identify, integrate, create, and share quality OERs.

Data analytics and learning analytics

The participants noted that "data analytics and learning analytics are becoming increasingly important" in our time. Participant 21 felt that it could be a good thing, but it could cause some problems as well. He envisioned that there would be both opportunities and risks. Several participants suggested that IDT programs should consider offering courses in those areas.

Results (RQ 3): what are seasoned scholars' perspectives on the research conducted in the IDT field?

Five themes related to research in the IDT field were identified: (1) Media comparison research, (2) quality, (3) funding, (4) research dissemination and impact, and (5) overemphasis on the latest technologies.

Media comparison research

Media comparison research appeared to be one of the biggest concerns the participants had regarding research in the IDT field. As the following quote shows, the participants described the problems of media comparison studies.

> Well, I think the problem with media comparison research is that you can never really conduct a clean experiment because the method and the medium are always confounded. You might say "do people learn better from VR or from a desktop PowerPoint presentation?" But the difference isn't just in the medium. It's also probably on the instructional method that's being used. So you really don't know what's causing the difference. Is that instructional method or the instructional medium? So I think usually when you get a difference, it's because the technology afforded an instructional method that the more traditional medium doesn't allow. So that's why maybe it was better. It wasn't because it's a better medium. It's because the instructional method was better.

Overall, the participants believed that media comparison research is not helpful. Participant 18 pointed out that media comparison studies are still prolific and continue to get published because many people are not aware of our literature base.

Quality

The participants agreed that although IDT researchers are making progress and producing a lot of publications, there is a problem with the quality of the research in the field. For example, Participant 6 pointed out that young people who don't know the foundation of the field "do studies that are no longer needed" or don't build their research on previous research. Participant 16 thought the pressure to publish in higher education "pushes a lot of work get done quickly and hastily" and that "some of it is of dubious quality." She wished that we could change the system because "there's a trade-off between quantity and quality."

In terms of research methodologies, Participant 21 felt that IDT researchers are stuck at doing lower-level research and that they are not stretching enough into new areas in terms of research methodologies.

Research dissemination and impact

The participants argued that IDT researchers should make sure that their research impacts practitioners and other researchers. They suggested that researchers should think more about the implications and practical applications "rather than doing a study for the sake of doing the study." Pointing out that IDT researchers are oftentimes speaking to themselves, Participant 3 argued that IDT research is "hidden," and that the dissemination of the research is one of the biggest problems in the IDT field.

Overemphasis on the latest technologies

The participants observed that IDT researchers overemphasize research on the latest technologies rather than on problems. According to Participant 3, for example, researchers are not looking at problems that can be solved, but instead they're looking at the latest "shiny objects," which are constantly changing. Participant 4 argued that this trend is "unhealthy" because it minimizes the importance of understanding the learners and goals and "finding good solutions to meet the goals."

Funding

Four participants expressed their concerns about research funding. Participant 4 commented that "research funding goes to things that are considered hot topics like AI and learning analytics that are not core in our field." Participant 3 felt that many important research efforts are not celebrated as much as the awarding of a grant. The participants were concerned that people in our field often give up important work and move their focus to "hot" areas where the money is, as the following quote indicates.

> Because of the nature of universities, much of the research is driven by funding. I know people who have stopped important research trajectories and moved their research agendas... That's important but they're doing it because that's where the money is... So I feel a little bit concerned about that. I don't know how to avoid that, but I worry about it because what it means is that somebody kind of defines what's important. And things that don't have funding don't get as much attention.

Results (RQ 4): what are seasoned scholars' perspectives on the current state and the future directions of the IDT field?

Seven themes were identified regarding the current state and the future directions of the IDT field: (1) identity issues, (2) terminology changes, (3) increased awareness and competition, (4) undergraduate programs, (5) artificial intelligence, (6) learning engineering, and (7) concerns and hopes about instructional design.

Identity issues

Several participants raised the issue of the identity of the field. They reported that they often had to explain what IDT is and what we do to others because many people outside the field don't understand what we do. Due to the interdisciplinary nature of the field and emergence of similar areas, Participant 18 thought that we would continue to have an identity crisis and see new naming conventions for what we do. Participant 8 felt that we didn't have a coherent image of the field. Overall, they hoped that we would find a great way to communicate what we do to people who aren't in our field. On the other hand, Participant 21 was not bothered much by the identity issue. He thought that our field would be always ill-defined as shown in the following quote.

> I think we're always going to be not well defined. I guess that doesn't bother me too much. We need to define ourselves by our skill sets and define ourselves more by the problems we're trying to solve. And the problems we're trying to solve are, you know, helping people learn better.

Terminology changes

Several participants discussed the changes in terminology and program names, as the following quote shows.

> We may go more to learning design. And I think that emphasis on both instruction and technology will be lessened, whereas the emphasis on learning and research and design will be emphasized. So, you know, we changed the name of our program to learning, design, and technology quite a few years ago. And as you know, a number of programs have done that.

Participant 9 commented, "In today's world, we need to think more about learning environments than just an instructional event." Participant 7 also suggested that we should focus more on learning and learning experience design. Participant 6 reported that her students sell them as learning experience designers as well as instructional designers. She thought that "we might have to sell the field differently."

Increased awareness and competition

The participants believed that the pandemic had highlighted our field and made the value of it more well-known. They reported that there's a greater demand for IDT professionals because of the increased awareness. Participant 18 envisioned that the demand would continue to grow across different contexts. However, several participants were concerned that there might be more people competing for those jobs in the future.

As online learning is rising in importance in many settings, Participant 3 envisioned that there would be "turf battles between departments" who own a course on online learning. He suggested that people in the area should "think about partnerships and negotiate wisely within those partnerships." Several other participants were also concerned about increasing competition with other departments and other fields. Participant 14 reported that there're programs that focus on designing experiences (e.g., experience design, industrial design, etc.) in at least half the colleges in his institution, even though they design experiences that are not

educational in nature. Participant 17 suggested that we should look at how designers in other disciplines work and learn from other design disciplines (e.g., fashion design, automobile design) "beyond just designing based on a prescribed model like ADDIE." Participant 4 felt that we're at a disadvantage in a highly competitive world, as shown in the following quote.

> Things are driven by competition at every level, national and international levels. So, Chinese are ahead of us with regard to big data and learning analytics. And they're going to stay ahead of us because they don't have the same barriers to implementing large scale learning analytics solutions. So we're trying to compete with a system that is not competitive... With regard to technologies, people are competing for jobs, and the higher paying jobs go to people with backgrounds in computer science and AI... Typically, departments like ours do not receive the support they deserve. Anyway, it's a highly competitive world. And people in instructional design basically are at a disadvantage and competing for jobs, for resources, for recognition, for research funding, and for all of those kinds of things. So, I think the field is in a state of decline, and I'm not optimistic about its future.

Undergraduate programs

Participant 14 reported that a lot of instructional design work is done by people who have not been properly trained in IDT programs. Participant 18 pointed out that many of the instructional design jobs call for a bachelor's degree, but there aren't many bachelor's degree programs in our field. Participant 14 believed that there would be greater opportunities if we had undergraduate programs, as shown in the following quote.

> I think that there's a big demand. I think one thing that we're going to have to grapple with in the future is that currently we're mostly graduate programs. And as the demand for people within our field gets bigger, if we can't meet the demand, the demand will go elsewhere, and others will start picking up the skills that we should be teaching... So, I think that one of the things that we ought to be looking for in the future is that we really should have programs at the undergraduate level... If you look around the country, there's already some programs that have started to have undergraduate programs. If we have undergraduate programs, there are greater opportunities for us to focus on different things at the master's level...

Artificial intelligence (AI)

There were three major different views on the impact of AI on instructional design. First, although there are many things that AI is good at, some participants believed that designing instruction is not one of them. Second, others believed that AI would design pretty good instruction in the future. But they thought it would be a long way in the future. Finally, some participants thought that AI would enable instructional designers to design more personalized and adaptive learning systems serving as a "bridge" or "tool."

Learning engineering

Learning engineering was brought up and discussed by a number of participants. They commented that there's a lot of talk about learning engineering these days. Some

participants thought that "it's a new name for the same stuff we do." Participant 5 hoped to see more communication and collaboration with them because she thought that "we're interested in the same thing." Participant 9 talked about a master's degree in learning engineering at an institution and the organization that is pushing the idea of learning engineering, as opposed to instructional design. Participants 9 and 21 suggested that IDT students need to be aware of these developments.

Concerns and hopes about instructional design

The participants shared various concerns and hopes about instructional design. Participant 4 felt that instructional design is being marginalized. More specifically, he thought that departments that focus on instructional design are not receiving the support and recognition that they deserve. Participant 6 informed that outsourcing of instructional design was happening. As the following quote indicates, she cautioned that there might not be many instructional design jobs if the trend continues.

> Some companies are outsourcing instructional design to cheaper designers in other countries, and that is happening. I didn't know that since it doesn't show up much in the literature. That is one thing we really need to be aware of... I am seeing lots of jobs right now. Globally we need to watch the trends.

Participant 20 pointed out that students who are instructional designers often do not engage in true instructional design. He used the term "true instructional design" in order to differentiate systematic instructional design involving problem solving from such tasks as creating simple handouts and putting them online. He argued that true instructional design is very people-oriented and context specific. Participant 11 hoped that IDT professionals would take more humanistic approach to instructional design considering social and cultural aspects. She believed that our value system would play an important role in selecting instructional approaches, methods, and tools.

Discussion and Conclusion

IDT programs face unique challenges in preparing students to be competitive in the changing job market. Unlike other programs that have one career path for students, IDT programs need to meet the diverse needs of IDT students going in many directions. It is impossible to address all the IDT competencies in the limited hours of IDT programs. In addition, it is very challenging to keep up with continuous changes of technology tools and jobs and emerging new technologies and update the IDT curriculum accordingly. In order to help IDT programs better prepare students for the future, it is critical to understand both practitioner and scholar perspectives. While most of the previous studies focused on identifying IDT competencies for specific careers (e.g., the instructional design professional) based on practitioners' perspectives or the content of job announcements, this study focused on the seasoned scholars' perspectives to identify "core" competencies that are important for everyone in the field and to examine ways to improve IDT programs.

The core competencies identified in this study included: (1) theoretical background, (2) instructional methods and strategies, (3) instructional design, (4) communication and other soft skills, (5) research, and (6) technology. Using the KSA framework, these competencies were further analyzed into knowledge, skills, and abilities domains. Some of these

competencies, including knowledge of learning theories, instructional design models and principles, project management, communication and collaboration skills, technology skills, and ability to work with others, were identified by previous studies (e.g., Kang & Ritzhaupt, 2015; Ritzhaupt et al., 2018; Wang et al., 2021). In addition to those competencies, the participants in this study emphasized the importance of knowledge of instructional methods and strategies and research competencies. They believed that all IDT professionals should understand what methods of instruction are going to work well in what different situations and have the ability to use research (as consumers of research) or conduct research studies (as independent researchers).

Many job announcements in the IDT field often indicate that students need various technology skills in order to get IDT jobs. Previous studies also reported specific technology skills, such as video and audio authoring, web design, multimedia production skills, for different IDT professionals (e.g., Ritzhaupt et al., 2018; Wang et al., 2021). Although the participants in this study agreed that technology skills are part of "core" competencies for IDT professionals, they believed that IDT programs should focus more on theories, instructional methods, and design principles rather than on technology. They suggested that IDT programs should help our students develop learning skills, rather than teaching how to use specific software, since technology is changing constantly. They also pointed out that it is almost impossible and inefficient to provide courses on specific software since most programs have limited credit hours. Several participants suggested that students need to learn how to evaluate, select, and use tools in the context of solving a design problem.

The results of the study provide useful ideas and insights into how to improve the IDT curriculum and programs. Overall, the participants recommended that IDT programs have less required courses (focusing on core competencies) and provide more choices considering the limited credit hours and time. Emphasizing the importance of learning about the history and foundations of the field, they suggested that IDT students need to understand where the field has been, where the field is now, and where it's going. They also suggested that IDT programs should help students develop various soft skills. They provided new insights into communication skills by specifying various types of communication skills that are needed to be successful in the IDT field. For example, they emphasized the importance of communicating with empathy, communicating difficult messages without offending others, making convincing arguments, persuading others, providing constructive feedback, and integrating verbal and non-verbal communication. Further, the participants believed that IDT programs should focus more on methods, strategies, design principles, theories, solving complex problems rather than on technology. Pointing out that most IDT jobs require a bachelor's degree, the participants recommended that we should have IDT programs at the undergraduate level. Kang and Ritzhaupt (2015) also found that more than 70% of the job announcements only required a bachelor's degree. As they noted, this poses a dilemma for IDT programs since most IDT programs in the U.S. are graduate level programs. The participants felt that although the demand for IDT professionals increases, we are not meeting the demand. As an example, they reported that a lot of instructional design work is done by people who have not been properly trained in IDT programs. They believed that there would be greater opportunities if we had undergraduate programs as other countries do.

In addition to the core competencies and curriculum issues, this study examined seasoned scholars' perspectives on the research conducted in the IDT field, which were not addressed in previous studies with practitioners. Regarding research in the IDT field, most participants were concerned about media comparison research. While there is a continuing interest in comparing traditional and new media, the participants generally

agreed that media comparison research is not very helpful. They also felt that IDT researchers overemphasize research on the latest technologies rather than on problems. This finding is in line with the work by Bodily et al. (2019). By examining research trends in the IDT field through an analysis of the literature published in the Scopus database between 2007 and 2017, Bodily et al. (2019) found that the scholarship in our field is very technology-centric with a large focus on hard, computer-based technologies. They reported that there is a lack of recent scholarship on learning and instructional theories and design frameworks. Overall, their findings are consistent with the evaluation of the participants in this study. The participants suggested that we should think more about the real-world problems to solve and the implications and practical applications rather than focusing on the latest technologies. Several participants pointed out that researchers tend to focus on hot topics and technologies partially because funding goes to those hot areas. They felt that much important research work is not getting attention and even abandoned because of lack of funding. In order to address these system-wide issues, more fundamental changes to our higher education system would need to occur. University administrators and policy makers need to make concerted efforts to encourage a diverse portfolio of funding opportunities to appreciate and support research diversity.

Overall, most participants were optimistic about the future of the IDT field. They felt that we are growing, making good progress on both theoretical and practical levels, contributing to society, and having a bright future. However, one participant had a very pessimistic view of the field. He felt that instructional design is being marginalized without receiving sufficient support and recognition and that IDT programs in the US are at a disadvantage in a highly competitive world. Several other participants were also concerned about increasing competition with other departments and other design-related fields. They suggested that we should be aware of the emergence of similar areas and effectively communicate who we are and what we do to others outside the field. Although many researchers have studied the identity of the field for several decades (Carr-Chellman et al., 2008), we continue to have identity issues. Defining a multidisciplinary field is not an easy task, and it requires more discussions and collaboration. As some participants suggested, there should be more conversations and collaboration between IDT programs and between universities at national and international levels to effectively address the issues in the IDT field.

The results of the study provide faculty, researchers, and practitioners in the IDT field with unique insights on how to improve IDT programs to better prepare IDT students for the future. However, the participants were all scholars in the U.S. Future research should include international IDT scholars to provide more comprehensive perspectives.

Declarations

Conflict of interest The author have no conflict of interest to declare.

Research involving human participants and/or animals N/A.

Informed consent The participants were asked to sign the informed consent form and send the signed form to the researcher via email before interviews.

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